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Amendments to the specification

Please add the following paragraph before line 1 of page 1.

Cross-reference to related applications

The disclosures in Italian Patent Application no. MI2003A002126, from which this application claims priority, are incorporated herein by reference.

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In case of traumatic or circulatory or degenerative events, if there has been a partial and/or momentary interruption of the neuromuscular pathways, the coordination of movements, i.e., the pulses that the brain sends to the nerves by means of the neurons in order to make the person perform movements ordered by the brain, may be damaged, and therefore the patient must undergo rehabilitating treatments in order to regain the motor control he has lost.

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However, these techniques, which allow the system to rehabilitate muscle and tendon proprioception sensors, i.e., the sensors meant to detect the quality and quantity of musculo-skeletal contraction/elongation, and somesthetic sensors, i.e., the sensors meant to detect the position of the various segments of the limb, are affected by drawbacks.

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Moreover, the use of predefined paths, traced on the surface, without any external aid, does not allow the patient to perform the type of therapy in which the patient is ordered to follow a path by applying a certain pressure with the limb in following said path.

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The aim of the present invention is to provide a system for performing induced limb movements, particularly for rehabilitating, sports and similar purposes, which allows the patient to perform a given work, without the mandatory presence of an operator who submits to the patient the various types of paths that he must trace with the injured limb or limbs.

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Another object of the present invention is to provide a system for performing induced limb movements that allows the system to have a substantially infinite plurality of different work programs available for the patient.

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Further characteristics and advantages of the invention will become better apparent from the description of preferred but not exclusive embodiments of the system according to the present invention, illustrated by way of the non-limiting example in the accompanying drawings, wherein:

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With reference to the figures cited above, the system according to the present invention, generally designated by the reference numeral 1, comprises data processing means, which are conveniently constituted for example by a personal computer 2 provided with display means 3, which allow the system to display a plurality of paths, which are programmed in the personal computer 2 and which the patient must follow with the injured limb or limbs that he accordingly wishes to rehabilitate or exercise.

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Conveniently, the patient is provided with means adapted to reproduce on any surface a path that is displayed on the display means 3 of the personal computer 2. Said means adapted to reproduce said preset path are conveniently constituted by a peripheral unit or terminal 4, which is adapted to communicate with the personal computer 2, for example by means of an infrared port, and is provided with position sensors 5, which allow the system to send to the personal computer signals that are adapted to identify at each instant the position of the peripheral unit 4 on a given surface 6 on which the patient moves the peripheral unit 4 in order to reproduce a path that is displayed on the display means 3 of the personal computer 2.

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In practice it has been observed that the system according to the present invention fully achieves the intended aim and objects, since it allows a patient to perform induced limb movements by using peripheral units 4 that are remotely connected to processing means and allow the system to propose a plurality of different rehabilitation paths, without requiring the presence of an operator in order to modify the path to be submitted to the patient, and especially with the possibility to provide repeatable work that can be verified by the operator, so as to assess the improvements performed in each instance by the patient.